US Army Corps of Engineers

DCAF Bulletin

Design Construction Analysis Feedback

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CEMP-C

Subject: Proper Storage of Structural Wood Panels

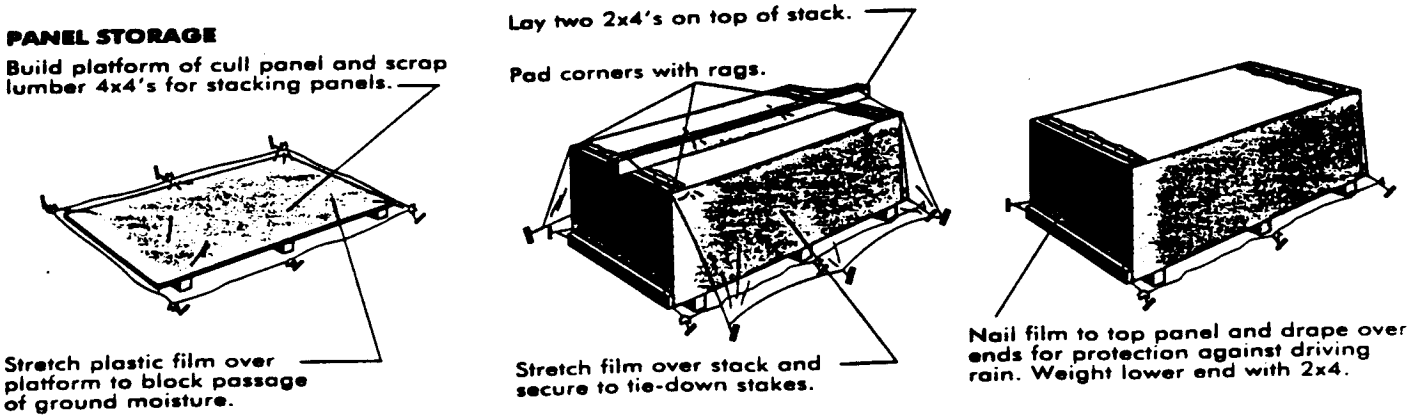
Applicability: Information

1. Wood products are not typically used on Corps projects except for such items as casework, trim and some millwork items such as interior doors. We typically use masonry, concrete and steel for the structural features on our construction projects. A notable exception is family housing projects which are typically of wood framed construction or in roofing construction for those structures which utilize fiberglass or composition shingle roofing materials. For these applications, wood products are both cost effective and provide excellent service.

2. Wood products, if not properly cared for during the construction process, may degrade to the point where they will not be serviceable. This is particularly true of structural wood panel products such as plywood (cross laminated wood veneer) or oriented strand board (OSB) which can warp and delaminate if not protected from the elements. On large family housing projects the contractor may order all of the structural framing materials at one time to achieve the savings which may accompany a large order. It is required that these materials be protected from degradation by the elements until they can be incorporated into a closed-in structure. The storage methods and recommendations for structural wood panels which follow were extracted from the American Plywood Association's (APA) pamphlet entitled Residential & Commercial Design/construction Guide.

3. Panels should be covered during transportation to the job site, either with tarpaulins or "lumber wrap". The APA recommends storing panels which will not be used in the near future under roof whenever possible. If moisture absorption is expected, the steel banding on panel bundles should be cut to prevent edge damage. It is especially important to protect the edges on tongue-and-groove floor panels and shiplapped siding panels both in handling and in storage.

4. Panels which must be stored outside should be stacked on a level platform supported by 4x4 stringers or other dunnage. Never leave panels or the supporting platform in direct contact with the ground. At least three full-width supports along the eight-foot length of the panel stack should be used as shown in the illustration with one located in the center of the platform and the others approximately 12 to 16 inches from each end. Cover the stack loosely with plastic sheets or tarps, anchoring the covering at the top of the stack, but keeping it open and away from the sides and bottom to assure good ventilation. Tight coverings prevent air circulation and can encourage mold formation when exposed to sunlight as a result of the greenhouse effect. Of equal importance with construction of an effective protection system is the maintenance of the system. The elements, wind in particular, damage covering systems such as plastic sheeting or tarpaulins, rendering what was an acceptable storage system into something less than acceptable. It is imperative that the contractor knows that he is required to maintain the coverings for the duration of the storage period.



5. The methods illustrated/discussed in the preceding paragraphs are not the only acceptable methods of storage. However, the principles discussed in these paragraphs should be incorporated into whatever storage method is utilized. During Design/Construction Evaluations improper storage of materials has been noted on projects incorporating structural wood panels as permanent construction into the finished project. It should be noted that in some cases, apparently the fact that the panels were constructed using a waterproof bond (Exposure 1) led to a mistaken impression that the panels required no protection in storage and construction. This is not the case and it is incumbent upon us as construction managers to become aware of what exposure durability classifications that are marked on the faces of the panels mean.

6. Exposure to moisture has caused failure of structural panel systems. This has resulted in costly repairs and has created a negative perception of the Corps as construction managers. It is, therefore, imperative that, as part of our quality assurance process, we assure that materials which are to be incorporated into the finished project be stored properly during the construction process. It is equally important that both we and the contractor be aware what constitutes an acceptable storage process prior to the material arriving on site. It is also important that proper storage of structural wood panels be addressed during the Preparatory Inspection meeting for Rough Carpentry and that the contractor's quality control chief be aware of his responsibilities in insuring proper storage of these materials with the caveat that improperly stored materials will be removed both from the inventory of stored materials and the job site.

7. This Construction Bulletin has been prepared in part from material furnished by the APA, P.O. Box 11700, Tacoma, Washington, 98411-0700, and has been coordinated with CEMP-EA.

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